

COMMONWEALTH OF VIRGINIA



Information Technology Resource Management (ITRM)

ENTERPRISE ARCHITECTURE

ENTERPRISE DATA MANAGEMENT (EDM)

PERSON CORE MATCHING ATTRIBUTES

DATA STANDARD

Virginia Information Technologies Agency (VITA)

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1 Publication Version Control

The following table contains a history of revisions to this publication.

Version	Date	Revision Description
1.0	08/18/2011	Initial Document
2.0	10/10/2011	Revised Document Based on Public Comment via ORCA

2 Reviews

- This publication was reviewed by the VITA Policy, Practice and Architecture group.
- This publication was reviewed by the VITA Enterprise Data Governance group.
- This publication was reviewed by Health Information Technology Standards Advisory Committee (HITSAC).
- Online review was provided for agencies and other interested parties via the VITA Online Review and Comment Application (ORCA).
- This publication was revised based on comments received from agencies and other interested parties via ORCA.

3 Definitions

Agency: an agency, department, institution, board, bureau, commission, council or instrumentality of the Commonwealth of Virginia.

Agency Head: the highest ranking executive officer designated within an agency of the Commonwealth of Virginia.

Attribute: a specific characteristic that describes an entity (e.g., customer name, employer identification number, commodity code).

Commonwealth: the government of the Commonwealth of Virginia (COV).

Data Dictionary: a centralized repository of information about data such as meaning, relationships to other data, origin, usage and format. A data dictionary includes such items as complete and accurate definitions of entities and attributes, attribute domains, valid values, synonyms or aliases, default values, data type and length, required/not required constraints and other information.

Data Owner: an individual who defines, manages and controls the use of data and ensures compliance with adopted standards within an agency. The Agency Head or designee designates the Agency Data Owner(s) for the functional/subject areas within their jurisdictional control or authority and ensures adequate resources for Agency Data Owners to develop and maintain their respective functional/subject areas in support of the Commonwealth's Data Management Program.

Data Steward: an individual assigned by an agency to represent the agency's interagency data needs and ensure that proposed standards meets those needs. Agency Data Stewards work on behalf of their Agency Data Owners and should have a broad understanding of the agency's data, be able to research data usage, be empowered to obtain agreement from Data Owners and have the requisite authority to address data issues for the agency.

Entity: a person, place, thing, event or concept identified by a user or an agency as having an independent existence and capable of being uniquely identified (e.g. Customer, Vendor, and Address).

Entity Relationship Diagram (ERD): an abstract representation of structured data, which produces a conceptual data model of a system and its requirements. The actual model is frequently called an "Entity Relationship Model" because it depicts the entities and relationships existing in the data. An ERD (the diagram of the model) may also be referred to as an Entity Relationship Model (ERM) or a Logical Data Model (LDM).

External Standard: defined and maintained by a Standards Development Organization to improve the ability to share electronic data and ensure semantic interoperability. Generally may apply to services, documents, vocabularies (i.e., reference terminologies) and/or messages. Includes extending (e.g., adding data elements or codes to) an existing external standard to accommodate requirements specific to the Commonwealth.

Internal Standard: defined by one or more Commonwealth agencies where external standards do not exist and approved by the Secretary of Technology.

Primary Key: an attribute that uniquely identifies each instance of the entity. For example, for each vendor, the vendor's location must be identifiable as a location and therefore each location has a unique identification number.

Relationship: an association between entities that is relevant to the constraints, rules and policies of an agency. Relationships can be thought of as verbs, linking two or more nouns. Examples: an *owns* relationship between a company and a computer(s), a *supervises* relationship between a manager and a subordinate(s), a *performs* relationship between an employee and a task(s), a *proved* relationship between a mathematician and a theorem (s), an *employed* relationship between an employee and a job position(s).

Standard: specific and, where applicable, technical documents containing directives and mandatory specifications governing the management, development and use of information technology resources.

Standards Development Organization (SDO): a domestic or international organization that plans, develops, establishes or coordinates voluntary consensus standards using procedures that incorporate the attributes of openness, balance of interests, due process, an appeals process and consensus in a manner consistent with the Office of Management and Budget Circular Number A-119, as revised February 10, 1998. (Article I, Public Law 108-237).

4 Scope

The Enterprise Data Management (EDM) Person Core Matching Attributes Data Standard defines the Person attributes that are typically common across agencies and used to uniquely identify individuals. The attributes selected will be used for matching people in the Commonwealth's EDM tool. The standard will support the configuration of the EDM tool and its matching functionality. Matching may occur within a single source database (e.g., to identify duplicates) or across multiple data sources (e.g., to locate a specific individual in different agency databases).

All agencies that choose to use the EDM tool, directly or indirectly, must recognize that only the attributes listed will be used for matching. The standard does not require that all attributes listed be provided to the EDM tool by an agency. If an agency does not collect an attribute (e.g., Birth Date), the agency should recognize that the missing data may affect the results of the matching algorithms.

This standard does not define all attributes that may be retained by the EDM tool, unique requirements of individual agencies, or unique requirements of a specific Community of Practice (e.g., only Health and Human Resource agencies). Separate data standards may be developed to define core attributes retained by the EDM tool but not used for matching purposes.

This Data Standard is compatible with nationally recognized data standards: Health Level 7 (HL7 v3 RIM), X12 and the National Information Exchange Model (NIEM).

5 EDM Person Core Matching Attributes Data Standard Governance

The EDM Person Core Matching Attributes Data Standard was developed by VITA in collaboration with Commonwealth agencies and HITSAC. The standard is owned by the Secretary of Technology and maintained by VITA in a searchable Enterprise Data Standards Repository available at <http://www.vita.virginia.gov/oversight/dm/default.aspx?id=10344>.

To advise the Secretary of Technology, the Commonwealth's Chief Information Officer formed an EDM Governance Work Group composed of Data Stewards from the following agencies:

- ◆ Auditor of Public Accounts (APA)
- ◆ Department of Behavioral Health and Disability Services (DBHDS)
- ◆ Department of Corrections (DOC)
- ◆ Department of Education (DOE)
- ◆ Department of Game and Inland Fisheries (DGIF)
- ◆ Department of General Services, Division of Consolidated Laboratory (DGS/DCLS)
- ◆ Department of Health (VDH)
- ◆ Department of Medical Assistance Services (DMAS)
- ◆ Department of Motor Vehicles (DMV)
- ◆ Department of Rehabilitative Services (DRS) representing the Disability Services Agencies
- ◆ Department of Social Services (DSS)
- ◆ Department of Taxation (TAX)
- ◆ State Board of Elections (SBE)
- ◆ Virginia Community College System (VCCS)
- ◆ Virginia Employment Commission (VEC)
- ◆ Virginia State Police (VSP)

HITSAC advises the Information Technology Advisory Council (ITAC) on the adoption of nationally recognized technical and data standards for health information technology systems or software pursuant to § 2.2-2699.7, Code of Virginia.

To ensure semantic interoperability within the Commonwealth and between Commonwealth agencies and external partners, HITSAC has recommended that the Commonwealth adopt or adapt and implement external standards and implementation guides to the maximum extent possible.

The HITSAC members are as follows:

- ◆ Dr. Marshall Ruffin, Executive Vice President and Chief Technology Officer, Inova Health Systems; HITSAC Chairman
- ◆ Dr. Sallie Cook, Chief Medical Officer, Virginia Health Quality Center
- ◆ Dr. James Harrison, Associate Professor and Director of Biomedical Informatics, Departments of Public Health Sciences and Pathology, University of Virginia
- ◆ Mr. Richard Pollack, Vice President and Chief Information Officer, Virginia Commonwealth University Health System
- ◆ Mr. John Quinn, Chief Technology Officer, HL7, Inc.

The VITA Enterprise Solutions and Governance Directorate (ESG) facilitated the development of this EDM Person Core Matching Attributes Data Standard document. The ESG resources responsible for supporting the Data Standard are as follows:

- ◆ Jerry Simonoff, Director, Enterprise Solutions and Governance Directorate
- ◆ Todd Kissam, Chief Enterprise Architect
- ◆ Susan McCleary, HITSAC Administrator
- ◆ Akeisha Heard, Data Analyst
- ◆ Joseph Grubbs, Master Data Governance Service Lead

6 Components of the EDM Person Core Matching Attributes Data Standard

The EDM Person Core Matching Attributes Data Standard consists of the following components:

1. A business narrative describing the standard (this document)
2. A data model available on the Web at <http://www.vita2.virginia.gov/oversight/EDM/EDM/AttachFiles/PersonLogicalModel.pdf>
3. Data definition reports derived from the data model available on the Web at <https://bi.vita.virginia.gov/StdsRepository/rdPage.aspx?rdReport=DisplayStandard&VersionID=126&StandardID=99>

7 EDM Person Core Matching Attributes Data Standard Authority

The following section documents the statutory authority granted by the Code of Virginia to the Secretary of Technology to establish the EDM Person Core Matching Attributes Data Standard, as well as the role of the Commonwealth's Chief Information Officer and governing Commonwealth agencies in the development, review and adoption process.

§ 2.2-225. Position established; agencies for which responsible; additional powers.

The position of Secretary of Technology (the Secretary) is created. ...

Unless the Governor expressly reserves such power to himself, the Secretary may, with regard to strategy development, planning and budgeting for technology programs in the Commonwealth: ...

12. Review and approve statewide technical and data standards for information technology and related systems, including the utilization of nationally recognized technical and data standards for health information technology systems or software purchased by a state agency of the Commonwealth, as recommended by the CIO. ...

§ 2.2-2007. Powers of the CIO.

A. In addition to such other duties as the Secretary may assign, the CIO shall: ...

2. Direct the formulation and promulgation of policies, guidelines, standards, and specifications for the purchase, development, and maintenance of information technology for state agencies, including, but not limited to, those (i) required to support state and local government exchange, acquisition, storage, use, sharing, and distribution of geographic or base map data and related technologies, (ii) concerned with the development of electronic transactions including the use of electronic signatures as provided in § 59.1-496, and (iii) necessary to support a unified approach to information technology across the totality of state government, thereby assuring that the citizens and businesses of the Commonwealth receive the greatest possible security, value, and convenience from investments made in technology. ...

12. Develop and recommend to the Secretary statewide technical and data standards for information technology and related systems, including the utilization of nationally recognized technical and data standards for health information technology systems or software purchased by a state agency of the Commonwealth. ...

§ 2.2-2010. Additional powers of VITA.

VITA shall have the following additional powers which, with the approval of the CIO, may be exercised by a division of VITA with respect to matters assigned to that division:

1. Prescribe regulations necessary or incidental to the performance of duties or execution of powers conferred under this chapter. ...

4. Develop and adopt policies, standards, and guidelines for managing information technology by state agencies and institutions. ...
6. Direct the establishment of statewide standards for the efficient exchange of electronic information and technology, including infrastructure, between the public and private sectors in the Commonwealth.
8. Develop statewide technical and data standards for information technology and related systems to promote efficiency and uniformity. ...

§ 2.2-2699.6. Powers and duties of the ITAC.

The ITAC shall have the power and duty to: ...

3. Advise the CIO on strategies, standards, and priorities for the use of information technology for state agencies in the executive branch of state government; ...
5. Advise the CIO on statewide technical and data standards for information technology and related systems, including the utilization of nationally recognized technical and data standards for health information technology systems or software purchased by a state agency of the Commonwealth; ...

§ 2.2-2699.7. Health Information Technology Standards Advisory Committee.

The ITAC may appoint an advisory committee of persons with expertise in health care and information technology to advise the ITAC on the utilization of nationally recognized technical and data standards for health information technology systems or software pursuant to subdivision 5 of § 2.2-2699.6. The ITAC, in consultation with the Secretary of Health and Human Resources, may appoint up to five persons to serve on the advisory committee. Members appointed to the advisory committee shall serve without compensation, but shall be reimbursed for all reasonable and necessary expenses incurred in the performance of their duties as provided in § 2.2-2825. The CIO, the Secretary of Technology, and the Secretary of Health and Human Resources, or their designees, may also serve on the advisory committee.

8 EDM Person Core Matching Attributes Entity Relationship Diagram (ERD)

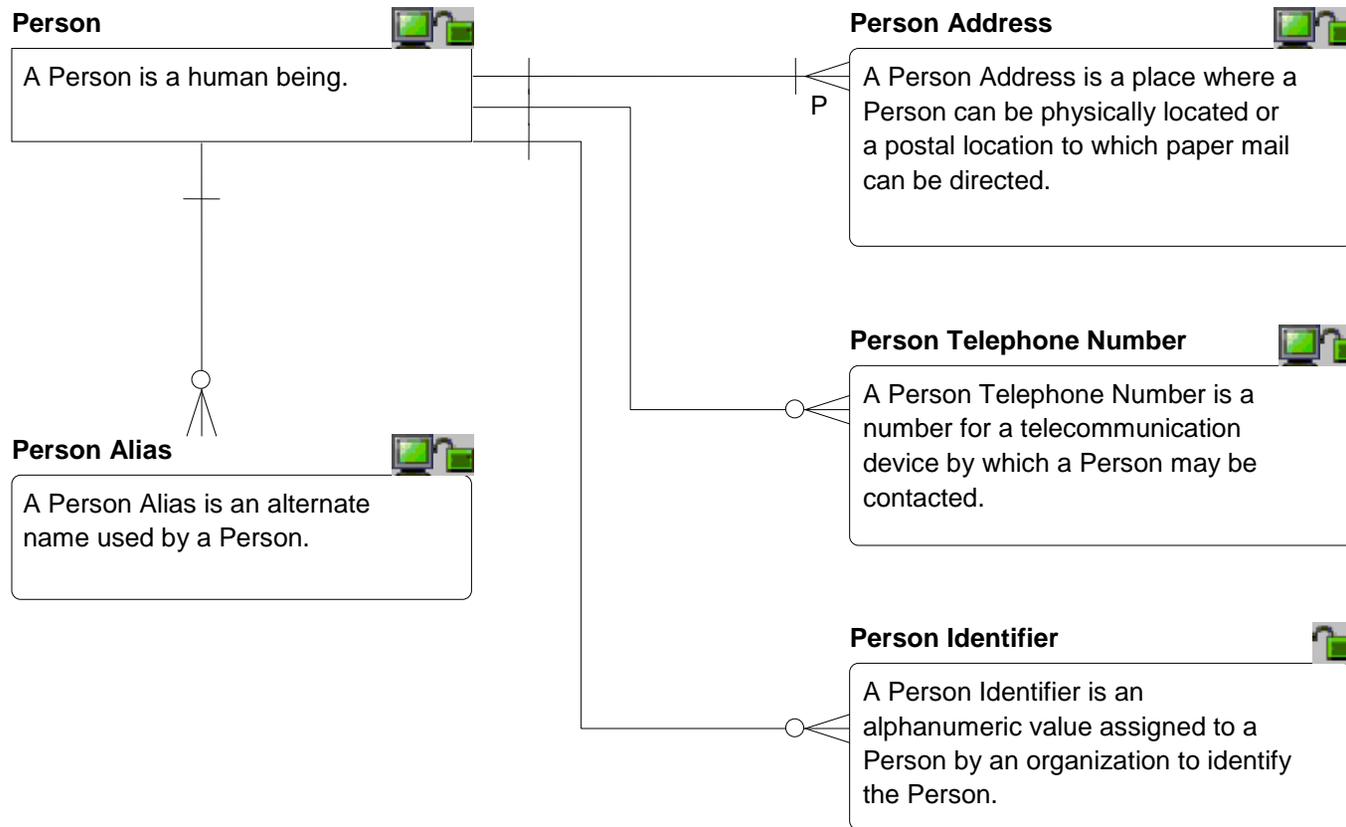


Figure 1. EDM Person Core Matching Attributes Entity Relationship Diagram

9 EDM Person Core Matching Attributes ERD Overview

The EDM Person Core Matching Attributes ERD graphically defines the Person, alias, address, telephone number and related information that will be used by the EDM tool to match Person records. Detailed definitions for each entity and attribute along with attribute characteristics, mandatory requirements and valid reference values are contained in the EDM Person Core Matching Attributes Data Dictionary, available at <https://bi.vita.virginia.gov/StdsRepository/rdPage.aspx?rdReport=DisplayStandard&VersionID=126&StandardID=99>.

This overview provides a summary description of the EDM Person Core Matching Attributes ERD, Figure 1.

The **Person** entity contains *Name*, *Gender Code* and *Birth Date* attributes for the Person. The identifying attribute is the *Enterprise Data Management Person Identifier*, which is assigned by the EDM tool. Any name with multiple parts (e.g., George Herbert Walker Bush, Vicente Fox Quesada) will be placed in the appropriate attribute (e.g., Herbert Walker in the *Middle Name Text* attribute, Fox Quesada in the *Last Name Text* attribute). The *Name Suffix Text* attribute stores terms that qualify the Person's legal name (e.g., Jr., Sr.), not professional qualifiers (e.g., Ph.D., Esq.).

The **Person Alias** entity allows zero to many alternate names to be associated with a Person. For performance reasons, a maximum of 10 aliases will be stored within the EDM tool. An alias could be created if, for example, an agency has "James Edward Smith" as the Person's name but notes that the Person also may be known as "Eddie Smith." The Person Alias entity contains the same name attributes as the **Person** entity.

The **Person Identifier** entity contains alphanumeric values assigned to a Person by organizations to identify the person. Zero to many identifiers can be associated with the Person, and prior-issued identifiers may be maintained in the EDM tool. The *Identifier Originating Authority Code* attribute indicates the organization that assigned the Person Identifier and potentially the type of identification assigned. Examples of assigning organizations include US HHS CMS Medicaid, US FBI, US SSA, Ohio BMV, Virginia DMV, Virginia DSS VACIS, and VA SBE Voter ID. The list of *Identifier Originating Authority Codes* will be developed as agencies join the EDM tool. Each organization assigning a Person Identifier will be issued a unique *Identifier Originating Authority Code* in the EDM tool.

The **Person Address** entity records a method of contacting the associated Person. The EDM tool requires at least one address to be available for matching. A Person can have one address for each *Address Purpose Code* – Physical, Mailing and Other. The Other type can be used to indicate a temporary physical or mailing address (for example, a college student's mailing address used during the school year, or a mailing address for a member of the military).

The *Address Type Code* attribute indicates location of the address relative to the United States. Valid values are Domestic (i.e., within the U.S.), Military (i.e., APO/FPO) and International. This attribute may control business rules for addresses. For example, only domestic addresses may be standardized, international addresses may be required to have a *Country Name Text*, and domestic addresses may be required to have a *State or Province Text* and *State-Locality Code*.

International addresses will have the city entered in the *City Name Text* attribute and a postal code, if one exists, in the *Postal Code Text* attribute. The *Country Name Text* attribute will contain the text name of the country instead of the ISO 3166-1 country code. The *State-Locality Code* attribute will contain the five-digit code from the standard ANSI INCITS 31:2009 (previously known as the FIPS Code). The first two digits indicate the state (e.g., 51 for Virginia) and the last three the county or city (e.g., 760 for Richmond City).

The **Person Telephone Number** entity records a method of contacting a Person. It allows for North American Numbering Plan (NANP) and international telephone numbers. An empty country code will indicate a NANP telephone number.

10 EDM Person Core Matching Attributes Data Standard Compliance

The Commonwealth of Virginia has established the EDM Person Core Matching Attributes Data Standard for the purposes of matching Person records within the EDM tool.

As of December 1, 2011, agencies making use of the EDM tool either directly or indirectly (e.g., via the Commonwealth Authentication Service – CAS) must adhere to this Data Standard when interfacing with the EDM tool or associated services.

Commonwealth agencies unable to comply with the standard must request an exception using the VITA Exception Form available on the Web at

http://www.vita.virginia.gov/uploadedFiles/Oversight/EA/Data_Management_Group/EA%20Change-Exception%20Request%20Form.doc

The completed form should be emailed to ea@vita.virginia.gov.